## Space Weather Forecast

Issued on Wednesday, 10 August 2022 at 12:26 Local

**This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales**

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**Space Weather Forecast Headline: Slight chance of Minor Geomagnetic Storms, especially on 10 and 11 August.**

**Analysis of Space Weather Activity over past 24 hours**
**Solar Activity:** Solar activity has been Very Low, with no significant flare activity. There are four sunspot regions on the disc, with all of these benign and relatively inactive. No Coronal Mass Ejections (CMEs) were visible in available imagery.

**Solar Wind / Geomagnetic Activity:** Solar winds have been mainly elevated and occasionally strong, as the Earth is influenced by a fast solar wind. Total interplanetary magnetic field strength has been weak, with the north-south component also varying weakly. Geomagnetic activity was mostly Quiet, with one Active interval early in the period.

**Energetic Particles / Solar Radiation:** No solar radiation storms were observed.

**Four-Day Space Weather Forecast Summary**
**Solar Activity:** Solar activity is likely to be Very Low or Low, with a slight chance of isolated Common-class flares.

**Solar Wind / Geomagnetic Activity:** No CMEs feature in the current forecast. Solar wind speeds are expected to be mainly elevated and occasionally strong through the next three days due to a fast solar wind. A decline is then possible on day 4. Geomagnetic activity is expected to be mainly Quiet, but with a risk of Active or G1/Minor Storms between 10 to 12 August.

**Energetic Particles / Solar Radiation:** No solar radiation storms are expected given the current relatively few and magnetically simple cohort of sunspots.

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**Geomagnetic Storms:**

| Geo-Magnetic Storm Probability (Exceedance) | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Minor or Moderate | G1 to G2 | No | 20 | 10 | 5 | 1 |
| Strong | G3 | No | 1 | 1 | 1 | 1 |
| Severe | G4 | No | 1 | 1 | 1 | 1 |
| Extreme | G5 | No | 1 | 1 | 1 | 1 |

**Radio Blackouts - X Ray Flares:**

| X Ray Flares Probability | Level | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | R1-R2 M Class | No | 5 | 5 | 5 | 5 |
| Very Active | R3 to R5 X | No | 1 | 1 | 1 | 1 |

**Solar Radiation Storms - (High Energy Protons):**

| Radiation Storms Probability (Exceedance) | Level ($cm^{-2}$ $sr^{-1}$ $s^{-1}$) | Past 24 Hours (Yes/No) | Day 1 (00-24 UTC) (%) | Day 2 (00-24 UTC) (%) | Day 3 (00-24 UTC) (%) | Day 4 (00-24 UTC) (%) |
|---|---|---|---|---|---|---|
| Active | ≥ S1 | No | 1 | 1 | 1 | 1 |
| Very Active | ≥ S3 * | No | 1 | 1 | 1 | 1 |

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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